



CNES



VIKING



Sous-Direction: Mission Operations

Service: Universe Sciences

PLAS-DED-VIKIN_V4-00060-CN

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INTERFACE CONTROL DOCUMENT

VIKING V4 data description

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| Written by: AUBRON Rémy CNES | Date: 09/12/2011 | |
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| For application: N/A | Date: 09/12/2011 | |

INDEX SHEET

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DOCUMENT TITLE:

INTERFACE CONTROL DOCUMENT
VIKING V4 data description

AUTHOR(S):

AUBRON Rémy - CNES

SUMMARY: VIKING V4 description : E et B Waves and Plasma Density (V4L/V4H)

RELATED DOCUMENTS: Stand alone document.

LOCALIZATION:

VOLUME: 1

COMPOSITE DOCUMENT: N

LANGUAGE: EN

CONFIGURATION MANAGEMENT: NG

CM RESP.:

REASONS FOR EVOLUTION: Creation

CONTRACT: N/A

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GLOSSARY

|

1. OVERVIEW

1.1 REFERENCE DOCUMENTS

| | |
|-----|---|
| RD1 | VIKING Low Frequency Wave Experiment (V4L), Data Processing, PLAS-EXP-VIKING_V4-00119-IRF |
|-----|---|

1.2 APPLICABLE DOCUMENTS

2 DATA MODEL DESCRIPTION

2.1 VIKING_V4

This data description has been produced using the following documents:
- VIKING Low Frequency Wave Experiment (V4L), Data Processing, PLAS-EXP-VIKING_V4-00119-IRF.

Machine information : Data Encoding : BIG-ENDIAN
Standard: ANSI/IEEE Standard 754 convention

2.1.1 E5_RECORD

Definition : An E5_record contains Viking-V4 data
Type : Structure
Length : 229376 bits

2.1.1.1 HEADER

Definition : General header composed of three parts : HEADER_1, HEADER_2, HEADER_3
Type : Structure
Length : 2048 bits

2.1.1.1.1 HEADER_1

Definition : Record and buffer characteristics. A buffer contains a whole SFA scan sweep. It consists of one or two records according to its duration.
Comment : A buffer duration can be equal to 0.3 up to 4.8 s ; a record duration is 0.3 up to 2.4 s.
Type : Structure
Length : 1024 bits

2.1.1.1.1.1 RECORD_NUMBER

Definition : Record number since the beginning of the current orbit
Type : Integer [0..65535]
Length : 16 bits

2.1.1.1.1.2 ON_BOARD_DATE

Definition : On board datation consisting of two formats : CCSDS and Calendar

Type : Structure

Length : 192 bits

2.1.1.1.1.2.1 CCSDS_FORMAT

Definition : CCSDS format

Comment : The time code format used here by CDPP and described below is not strictly the "CCS" format recommended by CCSDS (Document : CCSDS "Time Code Formats" - Ref. CCSDS 301.0-B-3 Blue Book January 2002).

Type : Structure

Length : 80 bits

2.1.1.1.1.2.1.1 PREAMBLE_FIELD

Definition : Preamble field : necessary to decode Time field

Type : Structure

Length : 8 bits

2.1.1.1.1.2.1.1.1 EXTENSION_FLAG

Definition : Extension flag

Type : Enumeration:

- NO_EXTENSION = 0 (BINARY)
- EXTENSION = 1 (BINARY)

Length : 1 bits

2.1.1.1.1.2.1.1.2 TIME_CODE_ID

Definition : Time code identification

Type : Enumeration:

- CUC_LEVEL_1 = 001 (BINARY)
- CUC_LEVEL_2 = 010 (BINARY)
- CDS = 100 (BINARY)
- CCS = 101 (BINARY)
- AGENCY_DEFINED = 110 (BINARY)

Length : 3 bits

2.1.1.1.1.2.1.1.3 CCS_SPECIFIC_FIELDS

Definition : CCS specific fields

Type : Structure

Length : 4 bits

2.1.1.1.1.2.1.1.3.1 CALENDAR_VARIATION_FLAG

Definition : Calendar variation flag

Type : Enumeration:

- MM_DD_VARIATION = 0 (BINARY)
- DDD_VARIATION = 1 (BINARY)

Length : 1 bits

2.1.1.1.1.2.1.1.3.2 RESOLUTION

Definition : Number of optional subsecond segments

Type : Enumeration:

- IN_SECOND = 000 (BINARY)
- IN_SECOND_E_2 = 001 (BINARY)
- IN_SECOND_E_4 = 010 (BINARY)
- IN_SECOND_E_6 = 011 (BINARY)
- IN_SECOND_E_8 = 100 (BINARY)
- IN_SECOND_E_10 = 101 (BINARY)
- IN_SECOND_E_12 = 110 (BINARY)
- NOT_USED = 111 (BINARY)

Length : 3 bits

2.1.1.1.1.2.1.2 TIME_FIELD

Definition : Time field : useful part of datation

Type : Structure

Length : 72 bits

2.1.1.1.1.2.1.2.1 MANDATORY_PART

Definition : Mandatory part of date

Type : Structure

Length : 56 bits

2.1.1.1.1.2.1.2.1.1 YEAR

Definition : Year of date
Type : Integer [1900..3000]
Length : 16 bits

2.1.1.1.1.2.1.2.1.2 MONTH

Definition : Month of year
Exists if : [CALENDAR_VARIATION_FLAG](#)[MM_DD_VARIATION]
Type : Integer [1..12]
Length : 8 bits

2.1.1.1.1.2.1.2.1.3 DAY_IN_YEAR_02

Definition : Day of year
Exists if : [CALENDAR_VARIATION_FLAG](#)[DDD_VARIATION]
Type : Integer [1..366]
Length : 16 bits

2.1.1.1.1.2.1.2.1.4 DAY_IN_MONTH

Definition : Day of month
Exists if : [CALENDAR_VARIATION_FLAG](#)[MM_DD_VARIATION]
Type : Integer [1..31]
Length : 8 bits

2.1.1.1.1.2.1.2.1.5 HOUR

Definition : Hour of time
Type : Integer [0..23]
Length : 8 bits
Unit : "h"

2.1.1.1.1.2.1.2.1.6 MINUTE

Definition : Minute of time
Type : Integer [0..59]
Length : 8 bits
Unit : "min"

2.1.1.1.1.2.1.2.1.7 SECOND

Definition : Second of time

Type : Integer [0..59]

Length : 8 bits

Unit : "s"

2.1.1.1.1.2.1.2.2 OPTIONNAL_PART

Definition : Optional part of date

Type : Structure

Length : 16 bits

2.1.1.1.1.2.1.2.2.1 SECOND_E_2

Definition : 10^{-2} s segment of time

Type : Integer [0..99]

Length : 8 bits

Unit : "10⁻²s"

2.1.1.1.1.2.1.2.2.2 SECOND_E_4

Definition : 10^{-4} s segment of time

Type : Integer [0..99]

Length : 8 bits

Unit : "10⁻⁴s"

2.1.1.1.1.2.2 CALENDAR_FORMAT

Definition : Calendar format

Type : Structure

Length : 112 bits

2.1.1.1.1.2.2.1 YEAR

Definition : Year of date

Type : Integer [1986..1987]

Length : 16 bits

2.1.1.1.1.2.2.2 MONTH

Definition : Month of year

Type : Integer [1..12]

Length : 16 bits

2.1.1.1.1.2.2.3 DAY

Definition : Day of month

Type : Integer [1..31]

Length : 16 bits

2.1.1.1.1.2.2.4 HOUR

Definition : Hour of time

Type : Integer [0..23]

Length : 16 bits

Unit : "h"

2.1.1.1.1.2.2.5 MINUTE

Definition : Minute of time

Type : Integer [0..59]

Length : 16 bits

Unit : "min"

2.1.1.1.1.2.2.6 SECOND

Definition : Second of time

Type : Integer [0..59]

Length : 16 bits

Unit : "s"

2.1.1.1.1.2.2.7 MILLI_SECOND

Definition : Millisecond of time

Type : Integer [0..999]

Length : 16 bits

Unit : "ms"

2.1.1.1.1.3 ORBIT_NUMBER

Definition : Orbit number since the beginning of the mission

Type : Integer [37..1653]

Length : 16 bits

2.1.1.1.1.4 SATELLITE_TIME

Definition : Time counter in 3/640 second. This field is divided in two parts : MSB and LSB

Comment : The actual value is $2^{16} \times \text{MSB} + \text{LSB}$

Type : Structure

Length : 64 bits

2.1.1.1.1.4.1 MSB

Definition : MSB part of satellite time

Type : Integer [0..65536]

Length : 32 bits

2.1.1.1.1.4.2 LSB

Definition : LSB part of satellite time

Type : Integer [0..65535]

Length : 32 bits

2.1.1.1.1.5 BUFFER_TYPE

Definition : The buffer type indicates if SFA data are available in this buffer (1 = YES ; 2 = NO)

Type : Enumeration:

- SFA = 1 (DECIMAL)
- NO_SFA = 2 (DECIMAL)

Length : 16 bits

2.1.1.1.1.6 BUFFER_NUMBER

Definition : Buffer number since the beginning of the current orbit

Type : Integer [1..65535]

Length : 16 bits

2.1.1.1.1.7 SWEEP_NUMBER

Definition : SFA scan sweep number since the beginning of the current orbit

Comment : Not significant if BUFFER_TYPE=2

Exists if : [BUFFER_TYPE](#)[SFA]

Type : Integer [0..65535]

Length : 16 bits

2.1.1.1.1.8 UNUSED

Definition : Not to be used

Exists if : [BUFFER_TYPE](#)[NO_SFA]

Type : Integer [0..65535]

Length : 16 bits

2.1.1.1.1.9 COMPLETE_SWEEP

Definition : (= 1 : either the SFA scan sweep contained in this buffer is complete or there are no SFA data and the record is complete [2.4 s long] ; = 0 : else)

Type : Enumeration:

- UNCOMPLETE = 0 (DECIMAL)
- COMPLETE = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.1.10 SWEEP_DURATION

Definition : Duration of the buffer (0.3 up to 4.8 s)

Type : Real [0.3..4.8]

Length : 32 bits

Unit : "s"

2.1.1.1.1.11 NUMBER_OF_SERIES_IN_CURRENT_SWEEP

Definition : Number of 300 ms series contained in the buffer

Type : Integer [1..16]

Length : 16 bits

2.1.1.1.1.12 NUMBER_OF_SIGNIFICANT_SERIES_IN_CURRENT_RECORD

Definition : Number of significant 300 ms series in the current record

Type : Integer [1..8]

Length : 16 bits

2.1.1.1.1.13 ABNORMAL_END_OF_SWEEP

Definition : Indicates if the end of the SFA scan sweep is missing or not (1 = YES ; 0 = NO) ; Not significant if BUFFER_TYPE field is equal to 2.

Type : Enumeration:

- NORMAL = 0 (DECIMAL)
- ABNORMAL = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.1.14 TM_LACK

Definition : Indicators of missing TM (1 = YES ; 0 = NO) before and after the current SFA scan sweep.

Type : Structure

Length : 32 bits

Unit : "1"

2.1.1.1.1.14.1 BEFORE_SWEEP

Definition : Indicator of TM lack before the current SFA scan sweep

Type : Enumeration:

- NO_LACK = 0 (DECIMAL)
- LACK = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.1.14.2 AFTER_SWEEP

Definition : Indicator of TM lack after the current SFA scan sweep

Type : Enumeration:

- NO_LACK = 0 (DECIMAL)
- LACK = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.1.15 RECORD_ID

Definition : Two identification fields of the current record with respect to the current buffer

Type : Structure

Length : 32 bits

2.1.1.1.1.15.1 NUMBER_OF_RECORDS_IN_CURRENT_SWEEP

Definition : Number of records contained in the current buffer

Type : Integer [1..2]

Length : 16 bits

2.1.1.1.1.15.2 RANK_OF_RECORD_IN_CURRENT_SWEEP

Definition : Rank of this record in the buffer (= 1 or 2)

Type : Integer [1..2]

Length : 16 bits

2.1.1.1.1.16 V4L_MODE_SWITCH_FLAGS

Definition : Identification of the V4L experiment operation mode changes

Type : Structure

Length : 48 bits

2.1.1.1.1.16.1 BEFORE_SWEEP

Definition : Indicates if a change happened just before the beginning of the current buffer (1 = YES ; 0 = NO)

Type : Enumeration:

- NO_SWITCH = 0 (DECIMAL)
- SWITCH = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.1.16.2 DURING_SWEEP

Definition : Number of changes during the current buffer

Type : Integer [0..16]

Length : 16 bits

2.1.1.1.1.16.3 NOT_MEANINGFUL

Definition : Not significant

Exists if : [DURING_SWEEP](#)[0]

Type : Enumeration:

- NOT_SIGNIFICANT = 0 (DECIMAL)

Length : 16 bits

2.1.1.1.1.16.4 FIRST_SWITCH_SERIAL_NUMBER

Definition : Series number where the first change happened

Exists if : [DURING_SWEEP](#)[1..16]

Type : Integer [1..16]

Length : 16 bits

2.1.1.1.1.17 TU_DATE

Definition : UTC datation consisting of two formats : CCSDS and Calendar

Type : Structure

Length : 192 bits

2.1.1.1.1.17.1 CCSDS_FORMAT

Definition : CCSDS format

Comment : The time code format used here by CDPD and described below is not strictly the "CCS" format recommended by CCSDS (Document : CCSDS "Time Code Formats" - Ref. CCSDS 301.0-B-3 Blue Book January 2002).

Type : Structure

Length : 80 bits

2.1.1.1.1.17.1.1 PREAMBLE_FIELD

Definition : Preamble field : necessary to decode Time field

Type : Structure

Length : 8 bits

2.1.1.1.1.17.1.1.1 EXTENSION_FLAG

Definition : Extension flag

Type : Enumeration:

- NO_EXTENSION = 0 (BINARY)
- EXTENSION = 1 (BINARY)

Length : 1 bits

2.1.1.1.1.17.1.1.2 TIME_CODE_ID

Definition : Time code identification

Type : Enumeration:

- CUC_LEVEL_1 = 001 (BINARY)
- CUC_LEVEL_2 = 010 (BINARY)
- CDS = 100 (BINARY)
- CCS = 101 (BINARY)
- AGENCY_DEFINED = 110 (BINARY)

Length : 3 bits

2.1.1.1.1.17.1.1.3 CCS_SPECIFIC_FIELDS

Definition : CCS specific fields

Type : Structure

Length : 4 bits

2.1.1.1.1.17.1.1.3.1 CALENDAR_VARIATION_FLAG

Definition : Calendar variation flag

Type : Enumeration:

- MM_DD_VARIATION = 0 (BINARY)
- DDD_VARIATION = 1 (BINARY)

Length : 1 bits

2.1.1.1.1.17.1.1.3.2 RESOLUTION

Definition : Number of optional subsecond segments

Type : Enumeration:

- IN_SECOND = 000 (BINARY)
- IN_SECOND_E_2 = 001 (BINARY)
- IN_SECOND_E_4 = 010 (BINARY)
- IN_SECOND_E_6 = 011 (BINARY)
- IN_SECOND_E_8 = 100 (BINARY)
- IN_SECOND_E_10 = 101 (BINARY)
- IN_SECOND_E_12 = 110 (BINARY)
- NOT_USED = 111 (BINARY)

Length : 3 bits

2.1.1.1.1.17.1.2 TIME_FIELD

Definition : Time field : useful part of datation

Type : Structure

Length : 72 bits

2.1.1.1.1.17.1.2.1 MANDATORY_PART

Definition : Mandatory part of date

Type : Structure

Length : 56 bits

2.1.1.1.1.17.1.2.1.1 YEAR

Definition : Year of date

Type : Integer [1900..3000]

Length : 16 bits

2.1.1.1.1.17.1.2.1.2 MONTH

Definition : Month of year

Exists if : [CALENDAR_VARIATION_FLAG](#)[MM_DD_VARIATION]

Type : Integer [1..12]

Length : 8 bits

2.1.1.1.1.17.1.2.1.3 DAY_IN_YEAR_02

Definition : Day of year

Exists if : [CALENDAR_VARIATION_FLAG](#)[DDD_VARIATION]

Type : Integer [1..366]

Length : 16 bits

2.1.1.1.1.17.1.2.1.4 DAY_IN_MONTH

Definition : Day of month

Exists if : [CALENDAR_VARIATION_FLAG](#)[MM_DD_VARIATION]

Type : Integer [1..31]

Length : 8 bits

2.1.1.1.1.17.1.2.1.5 HOUR

Definition : Hour of time

Type : Integer [0..23]

Length : 8 bits

Unit : "h"

2.1.1.1.1.17.1.2.1.6 MINUTE

Definition : Minute of time

Type : Integer [0..59]

Length : 8 bits

Unit : "min"

2.1.1.1.1.17.1.2.1.7 SECOND

Definition : Second of time

Type : Integer [0..59]

Length : 8 bits

Unit : "s"

2.1.1.1.1.17.1.2.2 OPTIONNAL_PART

Definition : Optional part of date

Type : Structure

Length : 16 bits

2.1.1.1.1.17.1.2.2.1 SECOND_E_2

Definition : 10^{-2} s segment of time

Type : Integer [0..99]

Length : 8 bits

Unit : "10⁻²s"

2.1.1.1.1.17.1.2.2.2 SECOND_E_4

Definition : 10^{-4} s segment of time

Type : Integer [0..99]

Length : 8 bits

Unit : "10⁻⁴s"

2.1.1.1.1.17.2 CALENDAR_FORMAT

Definition : Calendar format

Type : Structure

Length : 112 bits

2.1.1.1.1.17.2.1 YEAR

Definition : Year of date

Type : Integer [1986..1987]

Length : 16 bits

2.1.1.1.1.17.2.2 MONTH

Definition : Month of year

Type : Integer [1..12]

Length : 16 bits

2.1.1.1.1.17.2.3 DAY

Definition : Day of month

Type : Integer [1..31]

Length : 16 bits

2.1.1.1.1.17.2.4 HOUR

Definition : Hour of time

Type : Integer [0..23]

Length : 16 bits

Unit : "h"

2.1.1.1.1.17.2.5 MINUTE

Definition : Minute of time

Type : Integer [0..59]

Length : 16 bits

Unit : "min"

2.1.1.1.1.17.2.6 SECOND

Definition : Second of time

Type : Integer [0..59]

Length : 16 bits

Unit : "s"

2.1.1.1.1.17.2.7 MILLI_SECOND

Definition : Millisecond of time

Type : Integer [0..999]

Length : 16 bits

Unit : "ms"

2.1.1.1.1.18 SPARE

Definition : Spare

Type : Array with 36 items

Length : 288 bits

2.1.1.1.1.18.1 ELEM_A_SPARE_OCTET

Definition : Spare octet

Type : Integer [0]

Length : 8 bits

2.1.1.1.2 HEADER_2

Definition : SFA scan sweep characteristics (V4H experiment)

Type : Structure

Length : 512 bits

2.1.1.1.2.1 ELEMENT_NUMBER

Definition : The element number is an identifier of the SFA scan sweep characteristics.

Type : Integer [0..63]

Length : 16 bits

Specific Instance : 63 => "UNKNOWN"

2.1.1.1.2.2 SWEEP_TYPE

Definition : Indicates the type of the SFA scan sweep (0 = UNKNOWN ; 1 = STANDARD ; 2 = FAST_STANDARD ; 3 = LINEAR)

Type : Enumeration:

- UNKNOWN = 0 (DECIMAL)
- STANDARD = 1 (DECIMAL)
- FAST_STANDARD = 2 (DECIMAL)
- LINEAR = 3 (DECIMAL)

Length : 16 bits

2.1.1.1.2.3 NUMBER_OF_FORMATS_IN_SWEEP

Definition : SFA scan sweep length (number of 150 ms TM formats)

Type : Integer [2..32]

Length : 16 bits

2.1.1.1.2.4 SWEEP_RANGE

Definition : Indicates the frequency range that is analyzed (0 = UNKNOWN ; 1 = LOW ; 2 = HIGH ; 3 = FULL)

Type : Enumeration:

- UNKNOWN = 0 (DECIMAL)
- LOW = 1 (DECIMAL)
- HIGH = 2 (DECIMAL)
- FULL = 3 (DECIMAL)

Length : 16 bits

2.1.1.1.2.5 SWEEP_MODE

Definition : Operation mode (1 = PAS ; 2 = RS ; 3 = MI ; 4 = CAL)

Type : Enumeration:

- UNKNOWN = 0 (DECIMAL)
- PAS = 1 (DECIMAL)
- USER_RS = 2 (DECIMAL)
- MI = 3 (DECIMAL)
- CAL = 4 (DECIMAL)

Length : 16 bits

2.1.1.1.2.6 ANTENNA

Definition : Selected antenna (0 = Ez ; 1 = Ey)

Type : Enumeration:

- EY = 0 (DECIMAL)
- EZ = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.2.7 NUMBER_OF_FREQUENCY_STEPS

Definition : Theoretical number of analyzed frequency steps (depending on the ELEMENT_NUMBER field)

Type : Integer [0..256]

Length : 16 bits

2.1.1.1.2.8 NUMBER_OF_SAMPLES

Definition : Number of useful samples in this SFA scan sweep (less or equal to theoretical number of frequency steps)

Type : Integer [0..256]

Length : 16 bits

2.1.1.1.2.9 GYROFREQUENCY

Definition : Gyrofrequency at the beginning of the buffer

Type : Real

Length : 32 bits

Unit : "Hz"

2.1.1.1.2.10 FREQUENCY_STEP_CONVERSION_COEFF

Definition : Coefficients used to convert step numbers into frequencies

Type : Structure

Length : 224 bits

2.1.1.1.2.10.1 MAGNETIC_OFFSETS

Definition : Magnetic offsets

Type : Structure

Length : 96 bits

2.1.1.1.2.10.1.1 KHZ_1

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.1.2 KHZ_2

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.1.3 KHZ_4

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.2 ELECTRIC_OFFSETS

Definition : Electric offsets

Type : Structure

Length : 96 bits

2.1.1.1.2.10.2.1 KHZ_1

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.2.2 KHZ_2

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.2.3 KHZ_4

Definition : Not to be used

Type : Real [7.8..10.2]

Length : 32 bits

2.1.1.1.2.10.3 SYNTHETIZER_INCREMENT

Definition : Frequency increment

Type : Real [0.0..1.0]

Length : 32 bits

2.1.1.1.2.11 SPARE

Definition : Spare

Type : Array with 16 items

Length : 128 bits

2.1.1.1.2.11.1 ELEM_A_SPARE_OCTET

Definition : Not to be used

Type : Integer [0]

Length : 8 bits

2.1.1.1.3 HEADER_3

Definition : V4L experiment characteristics

Type : Structure

Length : 512 bits

2.1.1.1.3.1 V4L_OPERATION_MODES

Definition : V4L experiment operation modes

Type : Structure

Length : 96 bits

2.1.1.1.3.1.1 MUX_1_POSITION

Definition : MUX1 multiplexer position

Type : Enumeration:

- CALIBRATION = 0 (DECIMAL)
- DN1 = 1 (DECIMAL)
- DN2 = 2 (DECIMAL)
- EX = 3 (DECIMAL)
- EY = 4 (DECIMAL)
- EZ = 5 (DECIMAL)
- V4H = 6 (DECIMAL)
- BX = 7 (DECIMAL)

Length : 16 bits

2.1.1.1.3.1.2 MUX_2_POSITION

Definition : MUX2 multiplexer position

Type : Enumeration:

- CALIBRATION = 0 (DECIMAL)
- DN1 = 1 (DECIMAL)
- DN2 = 2 (DECIMAL)
- EX = 3 (DECIMAL)
- EY = 4 (DECIMAL)
- EZ = 5 (DECIMAL)
- V4H = 6 (DECIMAL)
- BX = 7 (DECIMAL)

Length : 16 bits

2.1.1.1.3.1.3 TM_MODE

Definition : TM output selector for DFT and WF (WF1 and WF2) subsystems

Type : Enumeration:

- WF_ONLY = 0 (DECIMAL)
- WF_DFT_HIGH = 1 (DECIMAL)
- DFT_ONLY = 2 (DECIMAL)

- WF_DFT_LOW = 3 (DECIMAL)

Length : 16 bits

2.1.1.1.3.1.4 DFT_FREQUENCY_RANGE

Definition : Frequency range analyzed in DFT power spectra (0 = [0.5 Hz - 2.6 kHz] ; 1 = [0.5 Hz - 15.6 kHz])

Type : Enumeration:

- ZERO_TO_2_6_KHZ = 0 (DECIMAL)
- ZERO_TO_15_6_KHZ = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.3.1.5 TIME_RESOLUTION_OF_DFT_SPECTRAL_DATA

Definition : Time resolution of DFT power spectra (150 or 300 ms)

Type : Enumeration:

- NOT_SIGNIFICANT = 0 (DECIMAL)
- DURATION_150_MS = 150 (DECIMAL)
- DURATION_300_MS = 300 (DECIMAL)

Length : 16 bits

Unit : "ms"

2.1.1.1.3.1.6 WF_FREQUENCY_RANGE

Definition : Frequency range covered by WF channels (0 = [0.5 - 428 Hz] ; 1 = [0.5 - 214 Hz])

Type : Enumeration:

- ZERO_TO_428_HZ = 0 (DECIMAL)
- ZERO_TO_214_HZ = 1 (DECIMAL)

Length : 16 bits

2.1.1.1.3.2 STORED_DATA_CHARACTERISTICS

Definition : Characteristics of V4L data stored in this record

Type : Structure

Length : 64 bits

2.1.1.1.3.2.1 NUMBER_OF_DFT_SPECTRA

Definition : Number of DFT power spectra

Type : Integer [0..16]

Length : 16 bits

2.1.1.1.3.2.2 NUMBER_OF_DFT_SAMPLES

Definition : Number of DFT samples in the current record

Type : Integer [0..4096]

Length : 16 bits

2.1.1.1.3.2.3 NUMBER_OF_SERIES_PER_WF_CHANNEL

Definition : Number of 300 ms series per each WF channel

Comment : WF series consist of 128 or 256 samples according to the operation mode. Their duration is equal to 300 ms

Type : Integer [0..8]

Length : 16 bits

2.1.1.1.3.2.4 NUMBER_OF_SAMPLES_PER_WF_CHANNEL

Definition : Number of samples per each WF channel (WF1 and WF2) in the whole current record

Type : Integer [0..2048]

Length : 16 bits

2.1.1.1.3.3 SPARE

Definition : Spare

Type : Array with 44 items

Length : 352 bits

2.1.1.1.3.3.1 ELEM_A_SPARE_OCTET

Definition : Spare octet

Type : Integer [0]

Length : 8 bits

2.1.1.2 STATUS_WORD

Definition : Status words of 16 consecutive TM formats

Type : Array with 16 items

Length : 10240 bits

2.1.1.2.1 ELEM_STATUS_PER_FORMAT_TYPE

Definition : Structure of a given format status

Type : Structure

Length : 640 bits

2.1.1.2.1.1 G

Definition : G status (8 values)

Type : Array with 8 items

Length : 128 bits

2.1.1.2.1.1.1 ELEM_A_STATUS_OCTET

Definition : Elementary status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.2 ST8

Definition : ST8 status (8 values)

Type : Array with 8 items

Length : 128 bits

2.1.1.2.1.2.1 ELEM_A_STATUS_OCTET

Definition : Elementary status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.3 ST9

Definition : ST9 status (8values)

Type : Array with 8 items

Length : 128 bits

2.1.1.2.1.3.1 ELEM_A_STATUS_OCTET

Definition : Elementary status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.4 ST10

Definition : ST10 status (8 values)

Type : Array with 8 items

Length : 128 bits

2.1.1.2.1.4.1 ELEM_A_STATUS_OCTET

Definition : Elementary status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.5 ST0

Definition : ST0 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.6 ST1

Definition : ST1 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.7 ST2

Definition : ST2 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.8 ST3

Definition : ST3 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.9 ST4

Definition : ST4 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.10 ST5

Definition : ST5 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.11 ST6

Definition : ST6 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.2.1.12 ST7

Definition : ST7 status

Type : Integer [0..255]

Length : 16 bits

2.1.1.3 V1_DATA

Definition : Direct electric fields measurements (V1 experiment)

Comment : There is a data set every 1.2 s

Type : Structure

Length : 2048 bits

2.1.1.3.1 DATA_SET_1

Definition : First V1 data set

Type : Structure

Length : 288 bits

2.1.1.3.1.1 RELATIVE_TIME

Definition : Time relative to the beginning of record

Type : Real

Length : 32 bits

Unit : "s"

2.1.1.3.1.2 EPAR

Definition : Electric field component parallel to B (magnetic field)

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.1.3 EC

Definition : Electric field component along the direction that completes the coordinate system (PAR, C, D)

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.1.4 ED

Definition : Electric field component perpendicular to B and S (sun direction), positive along B x S

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.1.5 VFG

Definition : Floating ground potential

Type : Real

Length : 32 bits

Unit : "V"

2.1.1.3.1.6 EPDIFF

Definition : Difference between max and min electric field magnitude during the following 1.2 seconds

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.1.7 USER_BIAS

Definition : Bias current

Type : Real

Length : 32 bits

Unit : "microA"

2.1.1.3.1.8 VGUARD

Definition : Guard potential

Type : Real

Length : 32 bits

Unit : "V"

2.1.1.3.1.9 IFILL

Definition : Status bits, set to 1 if the corresponding data word contains fill (normally=0). Bit 8=EPAR; bit 9=EC; bit 10=ED; bit 11=VFG; bit 12=EPDIFF; bit 13=USER_BIAS; bit 14=VGUARD

Type : Integer [0..255]

Length : 16 bits

2.1.1.3.1.10 ID

Definition : Not used

Type : Integer [0..255]

Length : 16 bits

2.1.1.3.2 DATA_SET_2

Definition : Second V1 data set (1.2 seconds after first one) ; it can be empty

Type : Structure

Length : 288 bits

2.1.1.3.2.1 RELATIVE_TIME

Definition : Time relative to the beginning of record

Type : Real

Length : 32 bits

Unit : "s"

2.1.1.3.2.2 EPAR

Definition : Electric field component parallel to B (magnetic field)

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.2.3 EC

Definition : Electric field component along the direction that completes the coordinate system (PAR, C, D)

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.2.4 ED

Definition : Electric field component perpendicular to B and S (sun direction), positive along B x S

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.2.5 VFG

Definition : Floating ground potential

Type : Real

Length : 32 bits

Unit : "V"

2.1.1.3.2.6 EPDIFF

Definition : Difference between max and min electric field magnitude during the following 1.2 seconds

Type : Real

Length : 32 bits

Unit : "mV/m"

2.1.1.3.2.7 USER_BIAS

Definition : Bias current

Type : Real

Length : 32 bits

Unit : "microA"

2.1.1.3.2.8 VGUARD

Definition : Guard potential

Type : Real

Length : 32 bits

Unit : "V"

2.1.1.3.2.9 IFILL

Definition : Status bits, set to 1 if the corresponding data word contains fill (normally=0). Bit 8=EPAR; bit 9=EC; bit 10=ED; bit 11=VFG; bit 12=EPDIFF; bit 13=USER_BIAS; bit 14=VGUARD

Type : Integer [0..255]

Length : 16 bits

2.1.1.3.2.10 ID

Definition : Not used

Type : Integer [0..255]

Length : 16 bits

2.1.1.3.3 SPARE

Definition : Not used

Type : Array with 184 items

Length : 1472 bits

2.1.1.3.3.1 ELEM_A_SPARE_OCTET

Definition : Spare octet

Type : Integer [0]

Length : 8 bits

2.1.1.4 ORBITOGRAPHIC_CHARACTERISTICS

Definition : Orbitographic and geomagnetic characteristics

Type : Structure

Length : 2048 bits

2.1.1.4.1 RELATIVE_TIME

Definition : Time relative to the beginning of record

Type : Real

Length : 32 bits

Unit : "s"

2.1.1.4.2 SPACECRAFT_POSITION

Definition : The spacecraft position is defined by three geographic components (latitude, longitude, altitude) in Earth coordinate system

Comment : Earth coordinate system : The origin is the centre O of Earth; XOY plan is equatorial plan ; X axis is positive towards Greenwich meridian ; Z axis is Earth spin axis (positive towards North)

Type : Structure

Length : 96 bits

Unit : "s"

2.1.1.4.2.1 GEOGRAPHIC_LATITUDE

Definition : Geographic latitude; latitudes north of the equator are designated by the use of the plus sign (+)

Type : Real [-90.0..90.0]

Length : 32 bits

Unit : "deg"

2.1.1.4.2.2 GEOGRAPHIC_LONGITUDE

Definition : Geographic longitude; all longitudes are positive and are considered as longitudes east of Greenwich.

Type : Real [0.0..360.0]

Length : 32 bits

Unit : "deg"

2.1.1.4.2.3 ALTITUDE

Definition : Altitude above Earth level

Type : Real [0.0..20000.0]

Length : 32 bits

Unit : "km"

2.1.1.4.3 SPACECRAFT_SPEED

Definition : The spacecraft speed is defined by three cartesian components in Earth coordinate system [see SPACECRAFT_POSITION field]

Type : Structure

Length : 96 bits

2.1.1.4.3.1 X

Definition : X component

Type : Real

Length : 32 bits

Unit : "km/s"

2.1.1.4.3.2 Y

Definition : Y component

Type : Real

Length : 32 bits

Unit : "km/s"

2.1.1.4.3.3 Z

Definition : Z component

Type : Real

Length : 32 bits

Unit : "km/s"

2.1.1.4.4 GEOMAGNETIC_DATA

Definition : Geomagnetic characteristics (given by the spacecraft position)

Type : Structure

Length : 64 bits

2.1.1.4.4.1 MAGNETIC_LOCAL_TIME

Definition : Magnetic Local Time

Comment : MLT is a real number given in hours and fractions of hour

Type : Real [0.0..24.0]

Length : 32 bits

Unit : "h"

2.1.1.4.4.2 INVARIANT_LATITUDE

Definition : Invariant Latitude

Type : Real [-90.0..90.0]

Length : 32 bits

Unit : "deg"

2.1.1.4.5 SPACECRAFT_ATTITUDE

Definition : Miscellaneous attitude angles

Type : Structure

Length : 64 bits

2.1.1.4.5.1 BFIELD_SPEED_ANGLE

Definition : Angle between spacecraft speed (in Earth coordinate system) and magnetic field (measured by V2 experiment) .

Type : Real [0.0..999.0]

Length : 32 bits

Unit : "deg"

Specific Instance : 999 => "UNDEFINED"

2.1.1.4.5.2 SPIN_ANGLE

Definition : Angle between the axis in the direction of the magnetometer boom and the XD-axis (fixed for the current orbit)

Type : Real [0.0..999.0]

Length : 32 bits

Unit : "deg"

Specific Instance : 999 => "UNDEFINED"

2.1.1.4.6 SPARE

Definition : Not used

Type : Array with 212 items

Length : 1696 bits

2.1.1.4.6.1 ELEM_A_SPARE_OCTET

Definition : Spare octet

Type : Integer [0]

Length : 8 bits

2.1.1.5 SFA_DATA

Definition : Measurements (one sample per step) supplied by the Stepped Frequency Analyser SFA (High Frequency Wave Experiment V4H). The whole frequency range is 10 to 500 kHz and is covered by 256 steps (or less).

Comment : Data are stored in three 256-sample arrays. If the number steps is less than 256, arrays contain fillers. Sampling period (ms) is equal to $150 * \text{NUMBER_OF_FORMATS_IN_SWEEP} / \text{NUMBER_OF_FREQUENCY_STEPS}$

Type : Structure

Length : 24576 bits

2.1.1.5.1 SWEPT_FREQUENCIES

Definition : Stepped frequencies of the current scanning

Comment : Unit = kHz
Type : Array with 256 items
Length : 8192 bits

2.1.1.5.1.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits

2.1.1.5.2 ELECTRIC_SFA

Definition : SFA measurements for an electric field component, either Ey or Ez
Comment : Unit = (mV/m)²/Hz
Type : Array with 256 items
Length : 8192 bits

2.1.1.5.2.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits

2.1.1.5.3 MAGNETIC_SFA

Definition : SFA measurements for the magnetic field component Bx
Comment : Unit = pT²/Hz
Type : Array with 256 items
Length : 8192 bits

2.1.1.5.3.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits

2.1.1.6 FILTER_BANK_DATA

Definition : Measurements supplied by the two 'high' filterbanks FB (High Frequency Wave Experiment V4H). Each filterbank (magnetic and electric field) has 8 filters. The whole frequency band is 3 to 700 kHz

Comment : Data are stored in sixteen 64-sample arrays (one per filter). There are 8 filters for B field and 8 filters for E field. If the record duration is less than 2.4 s , arrays contain fillers. Sampling period is 37.5 ms.

Type : Structure

Length : 32768 bits

2.1.1.6.1 MAGNETIC_FB

Definition : Measurements for the magnetic field sensor Bx (8 filters)

Comment : Unit = pT

Type : Structure

Length : 16384 bits

2.1.1.6.1.1 FBB_1

Definition : Filter #1 measurements (central frequency = 4 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.1.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.2 FBB_2

Definition : Filter #2 measurements (central frequency = 8 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.2.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.3 FBB_3

Definition : Filter #3 measurements (central frequency = 16 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.3.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.4 FBB_4

Definition : Filter #4 measurements (central frequency = 32 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.4.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.5 FBB_5

Definition : Filter #5 measurements (central frequency = 64 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.5.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.6 FBB_6

Definition : Filter #6 measurements (central frequency = 128 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.6.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.7 FBB_7

Definition : Filter #7 measurements (central frequency = 256 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.7.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.1.8 FBB_8

Definition : Filter #8 measurements (central frequency = 512 kHz)

Comment : Unit = pT

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.1.8.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2 ELECTRIC_FB

Definition : Measurements for the electric field sensor Ey (8 filters)

Comment : Unit = mV/m

Type : Structure

Length : 16384 bits

2.1.1.6.2.1 FBE_1

Definition : Filter #1 measurements (central frequency = 4 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.1.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.2 FBE_2

Definition : Filter #2 measurements (central frequency = 8 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.2.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.3 FBE_3

Definition : Filter #3 measurements (central frequency = 16 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.3.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.4 FBE_4

Definition : Filter #4 measurements (central frequency = 32 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.4.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.5 FBE_5

Definition : Filter #5 measurements (central frequency = 64 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.5.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.6 FBE_6

Definition : Filter #6 measurements (central frequency = 128 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.6.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.7 FBE_7

Definition : Filter #7 measurements (central frequency = 256 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.7.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.6.2.8 FBE_8

Definition : Filter #8 measurements (central frequency = 512 kHz)

Comment : Unit = mV/m

Type : Array with 64 items

Length : 2048 bits

2.1.1.6.2.8.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.7 FILTER_BANK_LOW

Definition : Data collected by the 'low' filterbank (FBL) which is a part of the Wave Analyzer (Low Frequency Wave Experiment V4L). This filterbank contains 3 filters covering the frequency range 200 to 3500 Hz.

Comment : Data are stored in three 64-sample arrays (one per filter). If the record duration is less than 2.4 s , arrays contain fillers. Sampling period is 37.5 ms.

Type : Structure

Length : 6144 bits

2.1.1.7.1 FBL_1

Definition : Filter #1 measurements (frequency range is 200 to 520 Hz)

Comment : Unit = mV/m or dB relative to 1 %

Type : Array with 64 items

Length : 2048 bits

2.1.1.7.1.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.7.2 FBL_2

Definition : Filter #2 measurements (frequency range is 520 to 1350 Hz)

Comment : Unit = mV/m or dB relative to 1 %

Type : Array with 64 items

Length : 2048 bits

2.1.1.7.2.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.7.3 FBL_3

Definition : Filter #3 measurements (frequency range is 1350 to 3500 Hz)

Comment : Unit = mV/m or dB relative to 1 %

Type : Array with 64 items

Length : 2048 bits

2.1.1.7.3.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value

Type : Real

Length : 32 bits

2.1.1.8 V2_DATA

Definition : Characteristics of the magnetic field measured by V2 experiment

Comment : Data are stored in 16 elementary datasets. Datasets are available every 150 ms.

Type : Array with A_FORMAT_NUMBER items

- A_FORMAT_NUMBER => Integer [1..16]

Length : 2048 bits

2.1.1.8.1 ELEMENTARY_DATASET

Definition : A dataset contains four data fields.

Type : Structure

Length : 128 bits

2.1.1.8.1.1 AMPLITUDE

Definition : Magnetic field module

Type : Real

Length : 32 bits

Unit : "nT"

2.1.1.8.1.2 ANGLES

Definition : Angles between magnetic field and three particular directions.

Type : Structure

Length : 96 bits

2.1.1.8.1.2.1 PSI

Definition : Angle between Ey antenna and the projection of magnetic field in the plane perpendicular to satellite spin axis

Type : Real [0.0..360.0]

Length : 32 bits

Unit : "deg"

2.1.1.8.1.2.2 PHI

Definition : Angle between magnetic field and Ey antenna.

Type : Real [0.0..180.0]

Length : 32 bits

Unit : "deg"

2.1.1.8.1.2.3 THETA

Definition : Angle between magnetic field and satellite spin axis

Type : Real [0.0..180.0]

Length : 32 bits

Unit : "deg"

2.1.1.9 PLASMA_DENSITY_DATA

Definition : These data are supplied by the plasma density instrument which is a part of Low Frequency Wave Experiment (V4L). This instrument consists of two independent density probes units (N1 and N2).

Comment : Data are stored in two 256-sample arrays (one per probe). If the record duration is less than 2.4 s , arrays contain fillers. Sampling period is 9.375 ms.

Type : Structure

Length : 16384 bits

2.1.1.9.1 N1_PROBE

Definition : Plasma density measurements supplied by N1 probe

Comment : Unit = cm⁻³

Type : Array with 256 items
Length : 8192 bits

2.1.1.9.1.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits

2.1.1.9.2 N2_PROBE

Definition : Plasma density measurements supplied by N2 probe
Comment : Unit = cm⁻³
Type : Array with 256 items
Length : 8192 bits

2.1.1.9.2.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits

2.1.1.10 DFT_WF1_WF2_DATA

Definition : DFT/WF data consisting of DFT power spectra (supplied by Discrete Fourier Transform analyzer) and/or two WF wave form channels (WF1 and WF2). DFT data are expressed in (mV/m)²/Hz or in dB relative to 1 % ; WF data are expressed in mV/m or in dB relative to 1 %. Allocation of DFT and/or WF measurements depends on TM output selector.

Comment : Data are stored in a 4096-sample array : at first DFT, afterwards WF1, lastly WF2 samples. If the record duration is less than 2.4 s , array contain fillers. WF sampling period (ms) is 1.171875 or 2.34375 ms.

Type : Array with 4096 items
Length : 131072 bits

2.1.1.10.1 ELEM_AN_IEEE_FLOAT

Definition : Measurement value
Type : Real
Length : 32 bits